

REMARKS

Claims 1 – 15 are presently pending in the application. Claims 1, 9 and 14 have been amended to clarify the invention. The specification has been amended to include a description of reference numeral 82 in Fig. 1 and to provide a more descriptive title. No new matter has been added and support for this amendment can be found in ¶0006 of the original specification.

In view of the amendments and arguments for patentability set forth below, Applicants respectfully submit that the application is in condition for allowance.

Claim Rejections – 35 U.S.C. § 102(b)

Claims 9 – 11 and 14 – 15 stand rejected under Section 102(b) as being anticipated by Withrow et al. U.S. Patent No. 2,575,574 (“Withrow”). Applicants traverse this rejection and respectfully submit that Withrow fails to disclose or suggest the claimed invention.

Claim 9, as amended, calls for a bi-directional valve apparatus comprising:

a first vapor flow path extending from a first port, through a liquid, to a second port, and vapor flow along the first vapor flow path occurs when there is a first pressure differential between the first and second ports; and

a second vapor flow path extending from the second port, through the liquid, to the first port, and vapor flow along the second vapor flow path occurs when there is a second pressure differential between the first and second ports;

wherein the first vapor flow path traverses a first chamber in fluid communication with a first reservoir, and the second vapor flow path traverses a second chamber in fluid communication with a second reservoir.

Claim 9 (emphasis added).

Withrow discloses a low-pressure and vacuum relief valve comprising first and second chambers A and B, where the chambers A, B are proportioned such that the relative cross-sectional areas of the chambers A, B produce particular operating characteristics. See Col. 4, lines 24 – 36. It is axiomatic that in order to sustain a proper Section 102 rejection, every element of the claim must be found in the cited reference. Claim 9 has been amended to clarify the invention by adding the following limitation: *wherein the first vapor flow path traverses a first chamber in fluid communication with a first reservoir, and the second vapor flow path traverses a second chamber in fluid communication with a second reservoir.* This is illustrated conceptually in Fig. 6 of the present application. Withrow fails to disclose or suggest anything

relating to first and second chambers *in communication with first and second reservoirs*. With reference to Fig. 2 of Withrow, a first port 19 (corresponding to the Examiner's citations) communicates with chamber B and a second port 21 communicates with chamber A. The Withrow chambers A and B are in direct communication and there is no structure in this reference that corresponds to first and second reservoirs as called for in amended claim 9. Accordingly, it is respectfully submitted that claim 9 is patentable over Withrow and that dependent claims 10 – 13 are patentable for at least the same reasons. Claims 14 (as amended) and dependent claim 15 contain similar limitations regarding the first and second reservoirs and are thus believed to be patentable for the same reasons as claims 9 – 13.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 1 – 8 stand rejected as being unpatentable over Withrow in view of Harris U.S. Patent No. 6,199,574 (“Harris”) . Applicants hereby reiterate the above argument distinguishing claims 9 – 15 from Withrow, and respectfully submit that the combination of Withrow and Harris fails to disclose or suggest the claimed invention.

In accordance with an aspect of the present invention as set forth in representative claim 1, as amended, there is provided a valve apparatus comprising:

a housing defining an interior chamber, *a first reservoir and a second reservoir*, the housing further including first and second ports communicating with the interior chamber;

a liquid separating the interior chamber into first and second portions, the first portion of the interior chamber being in fluid communication with the first port *and the first reservoir*, and the second portion of the interior chamber being in fluid communication with the second port *and the second reservoir*; and

a sensor disposed in the interior chamber.

Claim 1 (emphasis added).

Applicants hereby reiterate the above argument distinguishing Withrow from the present invention with respect to the lack of any teaching or suggestion of first and second reservoirs in fluid communication with the first and second ports and first and second portions/chambers.

Turning now to Harris, this reference discloses a electronic device for controlling the flow of fuel vapor through an aperture in a fuel tank. Harris does not contain any disclosure or

suggestion of a valve structure having the particular configuration called for in claim 1 with respect to first and second chambers/portions in fluid communication with first and second reservoirs. Accordingly, Harris fails to remedy the deficiencies in the disclosure of Withrow. It is therefore submitted that even if, assuming arguendo, these patents are properly combinable, such combination still fails to reach the present invention.

Furthermore, the electronic sensor 62 disclosed in Harris detects “liquid fuel 30 at the predetermined position *in fuel tank 16* when liquid fuel 30 enters cylindrical wall 72 as shown in FIG. 7. Liquid fuel 30 will enter cylindrical wall 72 during when liquid fuel sloshes in fuel tank 16 during vehicle operation.” See Col. 6, lines 9 – 13 (emphasis added). This sensor is not adapted to detect fluid behavior in part of a valve assembly, nor can it detect pressure differentials between first and second ports (i.e., claim 2) or displacement of the liquid in response to such a pressure differential (i.e., claim 3).

In view of the foregoing, Applicants respectfully submit that the combination of Withrow and Harris fails to teach or suggest the invention as recited in independent claim 1 and that dependent claims 2 – 8 are patentable for at least the same reasons.

Double Patenting Rejection

Claims 1 – 8, 14 and 15 stand rejected on the ground of nonstatutory obviousness-type double patenting over claims 1 – 8, 14 and 15 of U.S. Patent No. 6,889,669 (“the ‘669 Patent”). In response, Applicants are submitting a Terminal Disclaimer limiting the scope of any patent granted on the instant application that would extend beyond the expiration date of the full statutory term of the ‘669 Patent.

Objection to the Drawings

The Examiner has objected to the drawings for failing to show every feature of the invention as specified in the claims with respect to the thermistor, capacitive switch, a float and contact switch, a magnet and reed switch, a resistive coil switch, an optical switch and a resistance /conductance detector. Applicants respectfully traverse this objection on the ground that it is not necessary to show all of these elements in detail as they are depicted schematically as sensor 240/340 in the drawings, and that it is unnecessary to specifically illustrate each one of these expedients in the drawings as these are “conventional features disclosed in the description

and claims, where their detailed illustration is not essential for a proper understanding of the invention” and thus may be “illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation.” See 37 C.F.R. § 1.83.

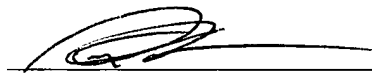
Defective Oath/Declaration

Applicants are having the inventors execute a new Declaration and will submit the same by supplementary amendment.

The Examiner is invited to contact the undersigned at (908) 707-1573 to discuss any matter concerning this application.

Respectfully submitted,
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By:

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